Meeting of the Decommissioning Project Community Workgroup (#26)
Tuesday, October 18, 2005
Cedar Point Center
BGSU Firelands

The meeting began at 5:30 p.m. Present were Workgroup members Anne Hinton, John Blakeman, Bill Ommert, Ralph Roshong, Bob Speers, Dave Stein, Bill Walker, Chris Gasteier, and new member Sharon Schaeffer (of the Erie County Health Department). NASA representatives included Senior Project Engineer and Acting Project Manager Keith Peecook, Project Environmental Manager Peter Kolb, and Public Affairs Specialist Sally Harrington, of NASA Glenn. Also present were Susan Santos, Michael Morgan and Anne Chabot of FOCUS GROUP. There were six members of the public in attendance. Joining the meeting were Tom Dragoun and Patrick Isaac from NRC Headquarters along with four NASA Headquarters officials: James Leatherwood, Mark Schoppet, Rich Wickman and Chris Hart.

Opening Remarks
Keith Peecook provided welcoming remarks reiterating that Tim Polich, Project Manager since 1998, had taken voluntary recall to active duty as Captain in the Naval Reserves at Pearl Harbor Shipyard, Hawaii for three years. Keith has been designated acting project manager of the Decommissioning. Keith then introduced new Workgroup member Sharon Schaeffer, RN, Community Health Coordinator from the Erie County General Health District Nursing Division. Susan Santos gave Sharon a copy of the July Workgroup meeting minutes, then asked the group for and received acceptance of the minutes from the July meeting. Susan reviewed the agenda for the meeting and invited members to stay and participate in the annual Community Information Session, which would immediately follow the Workgroup meeting.

Project Update
Keith reported on the status of the Decommissioning Project since the July Workgroup meeting. Keith reviewed the organizational changes that he had talked about at the July meeting, including demobilizing Montgomery Watson Harza (MWH) because of the change in activities slated for this coming year. He added that the US Army Corps of Engineers (USACE) is phasing out its presence onsite. In the next year, NASA will be focusing on identifying any remaining unknowns or "risk reduction". These activities will include addressing embedded piping, fixed equipment removal in the Hot Cells, and additional characterization work. Keith introduced the NASA Project Team members, who will head up these efforts. Radiation Safety Officer Bill Stoner of Argonne National Laboratory, will be leading the effort on characterization, Chuck Fellhauer will be overseeing work in the Hot Cells, and Jack Ricardo, who had led the "Proof of Process" embedded piping cleaning demonstration project, will oversee future embedded piping work. Keith stated that remaining the same would be licensing, project safety, procurement support, and independent oversight provided by Environmental Manager Pete Kolb who reports to the Environmental Management at Glenn (as he always has), and Cost Analyst Bob Bayda who continues reports to chief financial officer at Glenn.

Progress Since July
Keith reported that the first phase of soil remediation (reported on in July) in the Emergency Retention Basin (ERB) – the 200 by 300 foot earthen dike area inside the fence - was completed. Also finished was Area 1A south of Pentolite Ditch three to four hundred yards from the outfall of the reactor. A total of 10 million pounds of soil was safely packaged and shipped by truck then by train from Willard for disposal at Envirocare in Clive, Utah. Keith mentioned that characterization of Pentolite Ditch was completed.

He also reported that analysis of core bores is partially done. Some samples were sent to an off-site lab with instructions from the contractor MWH to analyze the first couple inches to identify contamination. This procedure was followed. However, analysis was not conducted on the rest of core to determine the depth of contamination. Keith reported that a full analysis of core borings would be conducted.

Fixed equipment removal and characterization in Cold Retention Area (two 500,000 concrete basins with rubber liner) was completed. The rubber liner, conduit and piping were removed; the covers were left intact. Holes were bored in the concrete at the bottom to sample gravel to see if any contamination had gotten underneath, which it hadn't. At 25-feet below grade the bored hole caused groundwater to rush in like an artesian well. The hole was quickly patched after sampling. Keith reported that all packaged low level radioactive waste (LLRW) had been sent offsite, and he doesn't anticipate any more waste shipments for about two years.

Keith showed a slide of the Emergency Retention Basin as it looks today. He described the process of removing six inches of soil, then surveying, then removing another six inches until readings are at cleanup level. Workgroup member John Blakeman asked where was grade level in the photo shown, and Keith replied that they started at grade level and in most cases a six-inch lift did the job. Keith then showed slides of characterization of Pentolite Ditch, showing a bridge lowered by overhead crane. Keith said sampling was done on a grid pattern - taking a couple hundred samples over an eight-week period, which was completed in August. He then showed slides of the Cold Retention Areas. Keith reported that once the rubber liner was removed, virtually nothing was found underneath. John Blakeman asked if the rubber had stayed intact. Keith answered that there were some breaks in the rubber – in one tank tears had happened during operation. Tanks had been pumped out and checked in intervening years. The tanks have since filled with groundwater otherwise they would have popped.

Keith updated the Workgroup on MWH's demobilization. Representatives of MWH, USACE, and NASA toured every building and all open areas to ensure that the "turnover condition" of all areas was safe, clean, and secure. An inventory was produced and audited of all government-owned property (128 pages) i.e., all hardware, cranes, administrative records and reports. Keith reported that the two-month process went smoothly and was completed by mid-September. There are still a few USACE personnel onsite to finish paperwork in the next few weeks.

Keith then discussed what is coming up in the next year. He referred to "risk reduction" as work in areas where there are still some unknowns. Identifying unknowns will help determine the "right way to finish this job," he said. Keith reviewed two options resulting from last year's evaluation, the first he referred to as "remove (rip) and ship," or the second to clean it up through decontamination, get it released, followed by demolition after license termination). Keith said results are mixed – in some areas it makes sense to decontaminate, in others there is not yet enough information. That is what will be determined through work in Hot Cells, and further cleaning and investigating embedded piping and continued characterization work. The goal will be to have sufficient information to give a solid cost estimate to NASA Headquarters to coincide with NASA's 2008 budgeting process. The near goal is to reduce the risks, the unknowns – these are not a danger to people, but a danger to the budget, said Keith.

NASA has reduced the number of workers (150 people at peak) and has put smaller contracts in place for these risk reduction activities. For example, MOTA is back reporting directly to NASA performing Hot Cell work and characterization activities. Babcock Services, Inc. will be cleaning and surveying embedded piping. John Blakeman asked if it was fair to say that the workforce has been reduced because much of the work has been done, cleaned up. Keith agreed in that 98% radioactive source is gone, most fixed equipment has been removed, and activity has shifted to decontamination. At the time (March 2005), it was discovered that embedded piping needed more investigation and decontamination activities were put on hold. The decision was made to begin demobilization then. As John Blakeman said, "NASA hit the pause button" to reevaluate the project and determine how best to use time and money to finish the job. Keith added that people have asked him if decommissioning has stopped. He replied that no it has not stopped, but is proceeding at a more deliberate pace to use the money left in an effective manner. The efforts being done now will provide the information necessary to write a detailed Request for Proposal (RFP) for the completion contract in FY 07 to finish the work in 2010. Keith doesn't plan on large contractors like Montgomery Watson or the Corps coming back (though good for the work that was done in the past but more than is needed in the future) and will recommend that the current project team finish the job.

Keith repeated NASA's commitment remains the same: To complete decommissioning while protecting the safety of the public, workers, and the environment; and to meet the conditions set for license termination of "unrestricted use" and return the PBRF site to a Greenfield condition with a current schedule for license termination is 2010.

Off-site Contamination

Keith mentioned that NASA hosted its normal annual Media Briefing earlier that morning where newspaper, television and radio reporters received the same information that he was presenting here and again later to the public at the annual Community Information Session. He reminded the group that characterization is an important part of decommissioning – it involves checking an area that may have been impacted by normal reactor operations to determine the existence and degree of any resulting contamination.

Keith reported that this past summer characterization was conducted in Pentolite Ditch – the outfall path for permitted discharges from the Reactor Facility flowed about a mile down Pentolite Ditch then into Plum Brook then five miles down to Sandusky Bay. NASA looked at about a mile stretch of Plum Brook and found two isotopes - Cesium 137 and Cobalt 60 from the outfall in decreasing amounts. Keith said that given what and where it is, it is likely from reactor operations. Both are man-made isotopes and can be found in northern Ohio streams because it is one of the elements still around from the fallout of airburst testing in the 1950s and 1960s. A normal background reading for Cesium in northern Ohio is about 1 Pico curie per gram and recent sampling found levels above that so it can not be assumed it is just from fallout. Also, levels tested upstream of the Reactor Facility show normal background levels until the point where Pentolite Ditch empties into Plum Brook where it is slightly elevated. It is being found down six to twelve to eighteen inches in silt – material that was deposited and accumulated from legal discharges from the reactor. Cesium has a half-life of 30 years so it can still be found in trace amounts. Bob Speer asked if Cobalt is also being detected. Keith responded that Cobalt is being found at 1/50 of the level of Cesium. Keith added that the ratio of Cesium to Cobalt of 50 to 1 is being found in piping systems inside the plant.

Keith explained that NASA has been doing environmental monitoring in Plum Brook since the time the Reactor Facility was operating and nothing had been detected. This summer's characterization efforts involved using more sophisticated detection instruments (up to 1,000 times more sensitive). When material was found in the ditch the decision was made to do more investigation further downstream (first between the NASA fence line and Bogart Road – taking a quick scoping sample of 30 samples in 4 locations that were easily accessible, i.e., bridge overpasses). Results received in late August showed low levels of Cesium and Cobalt in silt (up to 18 inches in depth). NASA informed the NRC and presented NASA's intention to conduct additional sampling to which the NRC agreed.

Keith reiterated that the levels found do not pose a health risk though they are above background. The levels at the highest are 38 Pico curies (1 trillionth of a curie). Keith said, "These are very, very small levels, definitely detectable, definitely above background, definitely deserve more study, but do not pose a health risk."

NASA informed the NRC of its findings. NASA has also shared this information with the Ohio Department of Health, Bureau of Radiation Protection, (which is the lead agency, not NRC because it is offsite, outside the fence line), the Ohio EPA, the Ohio Emergency Management Agency, the Erie County Emergency Management Agency (its director, Bill Walker, is also a Workgroup member), and Erie County Health Commissioner Pete Schade. Keith had also responded to questions (rumors of a radioactive liquid spill) passed along to him from Workgroup members (Bill Walker and Chis Gasteier). Keith provided via email a brief response and update to them and copied all Workgroup members. Susan Santos thanked Bill and Chris for forwarding these questions so NASA could quickly provide the necessary information. Bill Walker mentioned that Keith had responded to his call within five minutes.

John Blakeman asked about the chemistry of Cesium 137 and Cobalt 60. Keith suggested it is elemental. Peter Kolb responded that it concentrates in sediments. Keith made the point that the environmental results Peter has tracked to determine if decommissioning had caused an impact on the environment (there has not) – are different than the recent scoping sampling searching 12 inches in the mud. Keith said that this is information that NASA wants to get out to the public but does not want to cause undue alarm. Updates on this sampling will continue to be posted on the Telephone Information line. Susan added that NASA has used the channels that have always been used for the past five or six years, i.e., annual media briefings, annual Community Information Sessions, newsletters, telephone information line. Bill Walker added that he had spoken with the Journal that afternoon and they were very appreciative for the information given at the morning Media Briefing.

Keith then described NASA's second round of sampling from the upstream point where Plum Brook comes on station to downstream where it enters Sandusky Bay. These results "bound" the area - the upper and lower ends where a more detailed survey needs to be done. NASA is working with federal, state, and local agencies to develop a sampling plan, coordinating with those agencies (specifically ODH and NRC – doing split screen sampling). Susan added that NASA intends to send out an email about the draft sampling plan to Workgroup members and asked that they forward any comments on the plan to Keith. He then showed a map identifying areas where samples had been taken, followed by a graph of sampling results showing elevated Cesium levels (Cobalt is 1/50 and would not be visible on the map) in the area between the outfall and Bogart Road (the exception was a slight elevation at Route 6 – more data is needed to explain this). Using sodium iodide detectors, technicians walked in the streambed (dry due to lack of rain this summer) until they found "hot spots" then took sediment samples. John Blakeman asked if the data points correlated with stream gradient or flow. Keith said that he did intend to bring in a stream hydrologist to help identify areas where Cesium and Cobalt may have accumulated and settled in sediment. Workgroup member Bill Ommert (who is the Huron County Emergency Management Director) asked about a particular data point. Keith responded that the sample must have fallen apart and more sampling would be done in that area. He showed where the wastewater treatment plant had been. Keith suggested that the contamination could possibly be from the wastewater treatment plant but there is not enough definitive data at this time.

John Blakeman asked if the Cesium was sticking to biota. Keith said that his understanding was that the contamination is in the form of microscopic bits of metal that are like bits of "rust" in the sediment. Keith summarized the areas where elevated levels have been found. He asked the Workgroup when Route 2 was built (their response was late 1960s) because the streambed of Plum Brook was completely changed when that road was built. Keith then showed several slides of sampling being taken. Workgroup member Ralph Roshong mentioned that deer use the tunnels seen in the photographs. Keith mentioned that people taking the sampling were wearing gloves to protect the integrity of the sample and boots to keep their feet dry – no other protective clothing was necessary because of the very low levels. John Blakeman asked how far along is it in the

Cesium and Cobalt half-life? Keith responded, “Cesium’s half-life is just over 30 years, Cobalt’s half-life is 5.3 years.”

Susan Santos summarized for the Workgroup the two questions they are likely to be asked: 1) How high could it (levels of Cesium and Cobalt) have been? and 2) Would those levels have posed health concern? Keith noted that NASA has been monitoring continually and has not seen anything; and that current levels are clearly not a health concern. Susan added that NASA would need permission in the future to access the brook from private property. Keith added that one of the reasons the first set of samples were taken from publicly accessed areas was to move quickly (private property releases could take up to two weeks to acquire) and NASA wanted to get as much information as quickly as possible especially before winter. Susan said NASA would send information regarding the next phase of sampling to Workgroup members (and on the Information Line).

Susan reported that Sally’s office has been working with NASA’s legislative affairs office. That afternoon, Congresswoman Marcy Kaptur’s office had issued a press release asking for heads of NASA and NRC to hold a public meeting to discuss immediate plans for remediation. Susan noted that NASA has maintained open communication for the last 5-6 years and will continue to do so using regularly scheduled meetings, Website, Info Line, etc. Susan passed a copy of the release around to Workgroup members.

John Blakeman asked that the public might ask if remediation were required, what would it involve; if no remediation were required, why not? Keith answered that whatever the levels found and what the Ohio Department of Health determines will drive the decision. Bill Ommert asked if Cesium bio-accumulates. Keith asked the project team and other agency representatives in the audience and the response was in deer. Keith mentioned that during hunting season, the deer taken from the Plum Brook Station land are checked and there appear to be no health problems. Workgroup member Bob Speers asked if the deer had been checked for radiation. Keith said they have not been checked for radiation to date but that NASA would look into doing that. Bill Walker asked if ODH had given any indication as to what level cleanup will take place. Keith said not at this time but he said, ODH agrees with action NASA has taken so far. Keith added that they would work together on the more extensive sampling plan and what, if any cleanup is required. Bill Walker reiterated that ODH is not yet stating any reading above a certain level requires remediation. Keith said that until more information is gathered, ODH has not specified the requirements. When asked about the schedule for the sampling, Keith said that working with the various agencies and experts (hydrologist) and getting the plan reviewed will take possibly till Thanksgiving. He expressed his biggest concern was the onset of winter, i.e., they cannot take samples when Plum Brook freezes. He assured the group they will be working as quickly as possible.

Environmental Program Annual Update

Environmental Manager Peter Kolb reported that the environmental program was established in 2001 to monitor decommissioning activities by sampling radiological constituents in air, surface water, sediments and groundwater. NASA set what is referred

to as Project Specific Action Limits (PSAL), which are mathematically derived and at levels well below regulatory limits. NASA uses these as a "flag". If any reading approaches the PSAL this initiates further actions such as additional sampling and more detailed analysis, and an in-depth review of the operations. Pete reported that since the last report and over the 3 years of active decommissioning, there have been no changes in the environment as a result of these activities. Peter then showed maps of several sampling stations and sampling results. Beginning with air he showed the six locations where samples are collected weekly up-wind, at facility and down-wind. Next, he showed the data graphed and indicated gray boxes being the period when segmentation took place (i.e., most intense radiological work). John Blakeman asked how Peter accounted for the blip on the graph. Peter responded that the data point in December was still so far below the PSAL, it was not a concern. He added it might have been a result of school busses parked nearby. Surface water and sediment are sampled at the exact same point each month up-stream, at facility and down-stream. Peter added that there are instances of "false positives" due to some sedimentation in water samples and the presence other radionuclides. John Blakeman asked if these radionuclides were in the ground. Peter and Keith responded that these are naturally occurring and can be found anywhere with a half-life of billions of years.

Peter reported that there were four sediment sample results above PSAL at the outfall of Pentolite Ditch (Station 2) all of which are in the vicinity of known historic contamination. Peter mentioned that Pentolite Ditch (includes Station 2 & 3) was always planned for remediation. Peter reiterated that no downstream sample had levels above the PSAL. Next, Peter summarized the groundwater sampling and results identifying 12 "shallow" wells (10' – 25' deep) with five wells sampled monthly, all sampled annually; and seven "deep" wells (40' – 80' deep) with five wells sampled monthly, all sampled annually; and three building sumps with one sampled monthly, all annually. He added that some wells are dry most of the time, which results in very many instances of "false positives". Only one sample result above the PSAL was attributed to decommissioning in March of 2004 in a sump at minus 25 feet. It was thought that as work crews performed overhead work, something might have fallen into the sump. This sample was still three orders of magnitude below environmental requirements. Elevated levels were not found in subsequent sump samples or in any samples "downstream." Work crews were briefed about using precautionary measures near sumps such as covering sumps and using gloveboxes and negative pressure enclosures. He ended by saying that sampling results showed that project controls were working. Peter offered the technical manual to anyone interested in seeing how the PSAL were derived. He said that he would have two more monitoring reports available by the next Workgroup meeting.

Outreach Update

Sally Harrington reported that the October newsletter had been mailed. She then described the Community Information Session that would immediately follow the Workgroup meeting and invited members to stay and talk with members of the public. She mentioned that there was a display describing solar sails testing done earlier this year at NASA Plum Brook Station. Chief of the NASA Plum Brook Station Management Office, Rich Kunath, was expected to be on hand to answer any questions about the

testing. Sally mentioned that NASA's historic preservation staff were present and had brought along artifacts and a display regarding the Reactor Facility. Sally had also brought a model of the Mars Rover and a new Plum Brook Station brochure describing the ongoing testing activities. She mentioned that last Thursday BGSU Firelands had hosted Dr. Steven Williams, Director of Education at the Smithsonian National Air and Space Museum, who had given a presentation on Mars Exploration. He had left some CDs about the solar system that the public was welcome to take.

Susan asked the Workgroup about the frequency of upcoming meetings – whether they wanted to retain the quarterly schedule or have fewer meetings per year due to a noticeable drop in attendance at some previous meetings. The group wished to retain the current schedule especially given the ongoing sampling that was occurring in Plum Brook. Susan noted that the next meeting would be in late January, possibly early February. She suggested that the newsletter might be issued three instead of four times a year. She assured the group that updates would still be posted on the telephone Information Line and the website to keep getting the word out. She thanked the members again for their important role in the project.

Bob Speers thanked NASA for bringing the solar sails display and added that solar sail research had been conducted at BGSU Firelands. Sally mentioned that the Aero Bus would be parked outside during the CIS and also encouraged people to look at the displays set up on the other side of the room. Susan noted that portions of the documentary "Of Ashes and Atoms" would be playing during the CIS.

The Workgroup meeting adjourned at 6:45 p.m.